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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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FOLEY & LARDNER
2029 CENTURY PARK EAST
SUITE 3500
LOS ANGELES, CA 90067

EXAMINER

JACKSON, BLANE J

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 12/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/789,239	Applicant(s) YUASA, TOMOKAZU	
	Examiner Blane J. Jackson	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12, 19-24, 26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12, 19-24, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 28 September 2006 have been fully considered but they are not persuasive.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9, 11, 19-21, 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanuki (US 2002/0039424) in view of Nassimi (US 2004/0204155).

As to claims 7, 19 and 27, Watanuki teaches a method and electronic apparatus which can be powered by a battery and is configured to perform radio communications with another apparatus (figures 1A-1D, 2A-3B and 5, paragraphs 0027-0034, audio

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player (10), headphone or headset (20) with Bluetooth connection to the audio player), comprising:

A battery capacity detection means for detecting a remaining capacity of the battery (figure 10, paragraph 0087, headset (20) includes battery (55) and battery level detector (56)),

Audio data reproduction means for reproducing audio data with one of first sound quality (figure 4, paragraph 0043, receiving device (41), D/A converting/amplifying circuit (44) and Speaker (24)),

Control means for *outputting a warning sound* when the remaining capacity of the battery detected by the battery capacity detection means becomes lower than a predetermined value (paragraph 0087, headphone (20) detects the residue of an incorporated battery (55) by a battery level detector (56) and outputs a warning sound when the battery level is below a predetermined value).

Watanuki does not teach a control means for switching the sound quality of the audio data reproduced by the audio data reproduced by the audio data reproduction means from the first sound quality to the second sound quality when the remaining capacity of the battery detected by the battery capacity detection means becomes lower than a predetermined value.

Nassimi teaches a non-rechargeable wireless headset, figure 2, with power control circuitry to assist in saving energy by controlling the battery power flow to the transmitter, receiver, power supply and other associated circuitry, paragraphs 0038-0044. Nassimi further teaches the power control circuitry may operate automatically to

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turn on and off or to mute the receiver, paragraph 0044 or during use, automatically control the volume of the audio output from the earpiece speaker, paragraphs 0048-0051).

Since Nassimi, like Watanuki teaches power control circuits to control battery drain to within a wireless headset, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the headset battery power control circuits of Watanuki with the additional automatic audio control circuits of Nassimi (paragraph 0048) to enhance battery life and sound quality.

As to claims 8 and 20, Nassimi of Watanuki modified teaches the electronic apparatus according to claims 7 and 19 further comprising setting means for controlling whether or not the sound quality is switched based on the remaining capacity of the battery (paragraph 0048, power control circuitry may act to automatically control volume of the audio output from the earpiece speaker such that sound quality may be enhanced).

As to claims 9 and 21, Watanuki teaches the electronic apparatus according to claims 8 and 20 wherein said control means includes means for outputting a warning sound when the control means detects that the remaining capacity of the battery becomes lower than the predetermined value in a state where the setting means is so set that the sound quality is not switched in accordance with the remaining capacity of the battery (figures 4 and 10, paragraph 0087, the battery level detector (56) of the

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headset (20) outputs a warning sound generating command to a warning sound generator (57) when the battery residue is below a *predetermined value*, inherently before a reduction in system performance).

As to claims 11 and 23, Watanuki teaches the electronic apparatus according to claims 7 and 23 wherein said electronic apparatus further comprises a headset (figures 3B and 4, paragraph 0034, though termed a headphone (20) by Watanuki, the headphone is technically a headset comprising a speaker (24) and microphone section (27) for duplex operation).

Claims 12, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanuki (US 2002/0039424) in view of Nelson et al. (US 6,018,232) and Nassimi (US 2004/0204155).

As to claims 12, 24 and 26, Watanuki teaches a system control method and electronic apparatus which can be powered by a battery and is configured to perform radio communications with another apparatus (figures 1A-3B, paragraphs 0027-0034, audio player (10) and headphone (headset) (20) with Bluetooth connection), comprising:

A battery capacity detection means for detecting a remaining capacity of the battery (figures 4 and 10, paragraph 0087, headset (20) includes battery (55) and battery level detector (56)),

Radio signal transmission means (paragraphs 0043 and 0044, digital music data is transmitted via Bluetooth wireless communication system),

Audio data reproduction means for reproducing audio data with one of first sound quality (figures 4 and 10, paragraph 0043, receiving device (41), D/A converting/amplifying circuit (44) and Speaker (24)),

Control means for *outputting a warning sound* when the remaining capacity of the battery detected by the battery capacity detection means becomes lower than a predetermined value (paragraph 0087).

Watanuki does not teach a first control means for switching the output level of the radio signal transmitted by the radio signal transmission means from the first output level to the second level when the remaining capacity of the battery detected becomes lower than a predetermined value.

Nelson teaches a method of operating battery powered wireless devices where a monitored drop in the output voltage from the battery, the device power supply, signals a microcontroller (112) to reduce the transmit power amplifier (102) power level setting over the full discharge cycle of the battery, figure 5, column 11, lines 26-45. Nelson teaches this power adjustment results in a reduction in output power but provides for the power amplifier to properly operate over the full discharge cycle of the battery, column 11, line 46 to column 12, line 24.

Nelson also teaches independent setting means for controlling whether or not the output level is switched based on the remaining capacity of the battery (figure 5, column 11, lines 39-45, microcontroller (112) determines the feedback power out level reference per the monitored battery voltage level).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further utilize the battery level detection method in the wireless device of Watanuki to control the wireless transmit power as taught by Nelson to extend the life of the battery and provide transmission over the entire battery discharge curve.

Watanuki modified does not teach a second control means for switching the sound quality of the audio data reproduced by the audio data reproduced by the audio data reproduction means from the first sound quality to the second sound quality when the remaining capacity of the battery detected by the battery capacity detection means becomes lower than a predetermined value.

Nassimi teaches a non-rechargeable wireless headset, figure 2, with power control circuitry to assist in saving energy by controlling the battery power flow to the transmitter, receiver, power supply and other associated circuitry, paragraphs 0038-0044. Nassimi further teaches the power control circuitry may operate automatically to turn on and off or to mute the receiver, paragraph 0044 or during use, automatically control the volume of the audio output from the earpiece speaker, paragraphs 0048-0051).

Since Nassimi, like Watanuki of Watanuki modified teaches power control circuits to control battery drain to within a wireless headset, it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the headset battery power control circuits of Watanuki modified with the additional automatic audio control circuits of Nassimi (paragraph 0048) to enhance battery life and sound quality.

Allowable Subject Matter

Claims 10 and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. As to claims 10 and 22, the prior art made of record does not teach the defined sound quality; the audio data reproduction means uses a 5.1-channel mode when the audio data is reproduced with the first sound quality and a 2-channel mode with the second sound quality.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blane J. Jackson whose telephone number is (571) 272-


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7890. The examiner can normally be reached on Monday through Friday, 8:30 AM-6:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJJ


EDWARD E. URBAN
SUPERVISOR, EXAMINER
TECHNOLOGY CENTER